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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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12/30/1999

JAMES MURPHY

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05/13/2004

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EXAMINER

QURESHI, AFSAR M

ART UNIT

PAPER NUMBER

2667

9

DATE MAILED: 05/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/475,751

Applicant(s)

JAMES MURPHY

Examiner

Afsar M Qureshi

Art Unit

2667

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 February 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,5-14,17 and 19-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-14,17 and 19-26 is/are allowed.
- 6) ☒ Claim(s) 1,2 and 5-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Amendment

1. Responsive to amendment, entered 02/27/2004, Claims 3, 4, 15, 16 and 18 are cancelled and amended claims 1, 2, 6, 9, 10, 12, 19, 21, 23 entered as requested.
2. **The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.**
3. Claims 1, 2, 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fitzgerald (US Patent No. 6,421,720) in view of Kerr (US Patent No. 5, 844,600).

Regarding claims 1, 2. Fitzgerald discloses a gateway apparatus and method (18) including an encoder (22 see col. 2 lines 49-55) that encodes audio signals into audio packets and a packetizer (24 see col. 2 lines 66-67 and col. 3 lines 1-10) for converting the audio packets into network packets ready for transmission. The packetizer also monitors the congestion occurring in the packet network by way of an end-to-end delay signal, and the gateway apparatus (18) adjusts the amount of audio data encoded into the audio packet accordingly. Fitzgerald further discloses the size of the packet payload being dynamically adapted according to the amount of end-to-end congestion, which is inversely proportional to the packet rate (i.e. higher congestion, the lower the packet rate), in the packet network. Since the CPU utilization is a function of congestion (packet rate), it is inherent to Fitzgerald that the packet size is adjusted according to the CPU utilization (see col. 1 lines 48-65). Fitzgerald further discloses

Art Unit: 2667

increasing the payload size within the audio packet when the available bandwidth is low (i.e. CPU utilization is high). See col. 5 lines 5 - 10.

Fitzgerald does not expressly disclose an interface buffer for storing the audio packets, or the utilization capacity depending on the free space in the buffer.

Kerr discloses an audio packet buffer for storing audio packets. See col. 5 line 52 and col. 6 lines 17-19 and 33 - 34.

At the time the invention was made it would have been obvious to one of ordinary skill in the art to include the audio packet buffer, as disclosed by Kerr, into the invention as disclosed by Fitzgerald. The decreased packet rate and increased congestion would result in a decrease in the free buffer space within the audio buffer, because the increased congestion would require more packets to be queued before being output. It is therefore inherent to Fitzgerald in view of Kerr that the utilization capacity of the gateway is dependent upon the free space, or lack thereof, in the buffer. Furthermore, a packet buffer is responsible for holding packets in place while the processor processes the preceding packets in order to help prevent packet loss due to discarding. Therefore, it is inherent to Fitzgerald in view of Kerr that if the CPU utilization is at a maximum (threshold), the available packet buffer space will be zero thereby causing packet loss, and the need to decrease the packet payload. On the other hand when the CPU utilization decreases, the available buffer space will increase (above a threshold), and the packet payloads will decrease.

One of ordinary skill in the art would have been motivated to do this in order to prevent information loss from over saturation of the packetizer (processor) by controlling

Art Unit: 2667

the movement of audio packets and to reduce the complexity of the system by locating both the queue and buffer within the same memory.

Regarding claim 5. Fitzgerald further discloses adapting the size of the packet payloads according to the monitored level of network congestion (col. 1 lines 48-65). The level of congestion in a network is primarily based on the performance of its elements. Performance is dependent upon the amount of and ability to process the traffic input to these elements. An increase in the number of audio signals input to the switching element (as disclosed by Fitzgerald) would constitute an increase in data/voice traffic and a decrease the performance of the network switch. Furthermore causing an increase in network congestion.

Regarding claim 6. Fitzgerald in view of Kerr discloses all of the limitations as recited above in claim 1.

Fitzgerald does not disclose including multiple processors and multiple encoders to encode different incoming calls.

At the time the invention was made it would have been obvious to one of ordinary skill in the art to include multiple encoders in the invention as disclosed by Fitzgerald in view of Kerr.

One of ordinary skill in the art would have been motivated to do this to enable the ability to encode multiple audio signals at a time facilitating multiple communications

Art Unit: 2667

lines between multiple parties. This would provide for a more marketable and profitable invention.

Regarding claim 7. Fitzgerald further discloses encoding 20 milliseconds of the audio signal when the network congestion is below a first threshold, 40 milliseconds when network congestion rises above a first threshold, and 100 milliseconds or more when the network congestion rises above a second threshold greater than the first. See col. 4 lines 16-40.

Regarding claim 8. Fitzgerald further discloses the audio signal being received from a telephone handset, and transmitted as IP packets over an IP network (Packet Network 16). Fitzgerald teaches the audio signal being converted into packets fit for VOIP (Voice over Internet Protocol) applications, inherently making them suitable for transmission over an IP network. Furthermore Fitzgerald discloses multiple telephone sets connected to handsets connected to the gateway (18).

Fitzgerald in view of Kerr does not expressly disclose the audio signal being received over an incoming PSTN call.

At the time the invention was made it would have been obvious to one of ordinary skill in the art to be able to receive audio signals from a PSTN in the invention as disclosed by Fitzgerald.

Art Unit: 2667

One of ordinary skill in the art would have been motivated to do this in order to provide for large amounts of telephones to be connected to the invention, as disclosed by Fitzgerald in view of Kerr, providing for increased usage and marketability.

Allowable Subject Matter

4. Claims 9 -14, 17, 19 - 26 are allowed over prior art of record.

Response to Remarks

5. No arguments as to the rejection of claims are presented. In the Remarks, the Applicant indicated that all claims, as amended, are allowable. However, the Examiner contends that amended claims 1, 2, 5-8 do not include allowable subject matter. Fitzgerald in view of Kerr, as discussed above discloses all the limitations, interpreted in its broadest terms.

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Art Unit: 2667

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Afsar M Qureshi whose telephone number is (703) 308 8542.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on (703) 305 4378. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



AFSAR QURESHI
PATENT EXAMINER

May 10, 2004